

P and S wave Simulation-Questions and Observations

These series of questions can help you facilitate discussions and observations about how the waves propagate differently down the line (watch [this video](#) first).

Observation Questions from the P-wave Simulation

- 1) Did the wave move down the line instantaneously or did it take some time? (i.e., is there a velocity for P-wave propagation?)
- 2) Although each person was briefly subjected to a disturbance, did individuals permanently leave their original locations?
- 3) In which direction (same as or different from the wave propagation) did each person move as the wave passed?
- 4) If you unlink your arms will the wave still move down the line?
- 5) In both cases, when the wave passed the people moved closer together temporarily (compression), and then apart (dilation) to return to their original positions.

Some Observations from the S-wave Simulation (and differences from P waves)

- 1) Is there a velocity for S-wave propagation?
- 2) Is S-wave velocity slower or faster than P-wave?
- 3) Does each person end back in their original position after the wave passes? Is it the same as or different from P-waves?
- 4) Is the direction of motion of each person parallel or perpendicular to the direction of wave propagation? Is it the same as or different from P-waves?
- 5) If you unlink arms, will the wave still move down the line? Is it the same as or different from P-waves?



Educators are simulating Seismic waves at an EarthScope Interpretative Workshop.